

What We Claim Is:

1. A composition as obtained from a melt comprising esterified starch and a linear polyester.
2. A composition according to claim 1, in which the esterified starch is selected from the group consisting of C₂ to C_n starch esters.
3. A composition according to either of claims 1 or 2, in which the esterified starch is selected from the group consisting of C₂ to C₈ starch esters.
4. A composition according to any preceding claim, in which the esterified starch is selected from the group consisting of starch acetates, starch propionates, starch butyrates, starch pentanoates, and starch hexanoates, and mixtures thereof.
5. A composition according to any preceding claim, in which the starch ester has more than 2 carbon atoms in its alkyl-carbonyl residue.
6. A composition according to any preceding claim, in which the starch ester contains at least two different ester residues attached to the same starch molecule.
7. A composition according to claim 6, in which the starch ester comprises at least two members selected from the group consisting of acetate, propionate, butyrate, pentanoate, hexanoate, heptanoate and octanoate bound to the same starch molecule.
8. A composition according to the preceding claim, in which the mixed starch ester comprises both acetate and propionate groups bound to the same starch molecule.
9. A composition according to claim 7, in which the starch comprises both acetate and butyrate groups bound to the same

starch molecule.

10. A composition according to claim 7, in which the starch comprises both propionate and butyrate groups bound to the same starch molecule.

11. A composition according to claim 1, wherein the starch ester is a physical blend of at least two different starch esters.

12. A composition according to claim 1, in which the degree of substitution of the esterified starch is from about 1.5 to about 2.9.

13. A composition according to claim 1, in which the degree of substitution of the esterified starch is from about 1.8 to about 2.9.

14. A composition according to claim 1, in which the degree of substitution of the esterified starch is from about 1.8 to about 2.5.

15. A composition according to claim 1, wherein the esterified starch is derived from a starch with an amylose content at least about 50% by weight with respect to that of the dry starch.

16. A composition according to claim 1, wherein the esterified starch is derived from a starch with an amylose content being in excess of about 70% by weight with respect to that of the dry starch.

17. A composition according to claim 1, in which the aliphatic hydroxy-carboxylic acid has the general formula:



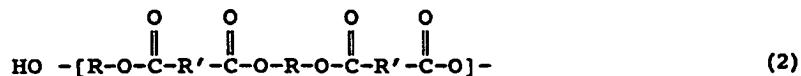
wherein n is an integer from 1 to 21, preferably an integer from 1 to 7, and more preferably 1, 2, 3, 4 or 5.

18. A composition according to the preceding claim, wherein said

acid is selected from the group comprising glycolic acid ($n = 1$), lactic acid ($n = 2$), and wherein the hydroxyl group is fixed in the alpha-position), hydroxy butyric acid, hydroxy isobutyric acid ($n = 3$), hydroxy valeric acid ($n = 4$), hydroxy caproic acid ($n = 5$) wherein in each case the hydroxy group is fixed in the terminal position.

19. A composition according to claim 17 in which the acid is hydroxy caproic acid in the form of a cyclic ester.

20. A composition according to claim 1, wherein the linear polyester is derived from the combination of a diacid and a diol and corresponds to the formula:



where R is an aliphatic hydrocarbon residue with 2, 4 or 6 carbon atoms; and R' is an aliphatic saturated or unsaturated divalent hydrocarbon residue with 2 to 22 carbon atoms.

21. A composition according to the preceding claim, in which the polyester is selected from the group consisting of poly(3-propiolactone), poly(5-valerolactone), poly(6-caprolactone), poly(6-decalactone), poly(7-enantholactone), poly(8-caprylolactone), poly(12-laurolactone), poly(15-pentadodecanolactone), poly(hydroxybutyrate), poly(hydroxyvalate), or poly(hydroxybutyrate-co-valerate).

22. A composition according to claim 21, in which the linear polyester is selected from the group consisting poly(ethylene succinate), poly(ethylene adipate), and mixtures thereof.

23. A composition according to claim 17, in which the polymer is poly(6-caprolactone).

24. A composition according to any one of claim 1, in which the

polyester is present in an amount of from 10 to 95% by weight with respect to that of the composition, and preferably in an amount of from about 20 to 75% by weight with respect to that of the composition.

25. A composition according to any one of claims 24, in which the polyester is present in the composition in an amount of from about 20 to 50% by weight with respect to that of the composition.

26. A composition according to claim 1, which further comprises of a plasticizer, said plasticizer being present in an amount of 1 % to 50 % by weight of the total composition.

27. A composition according to claim 26, in which the plasticizer is N-ethyl-o,p-toluene sulfonamide.

28. A composition according to claim 1, which further includes a member selected from the group consisting of extenders; fillers; wood derived materials; oxides of magnesium, aluminum, silicon, and titanium; alkali and alkaline earth metal salts; lubricants; mold release agents; acid scavengers; UV-stabilisers; coloring agents; flame retardants; antioxidants; thermal stabilisers; and mixtures thereof.

29. A composition according to claim 1, further comprising a native starch selected from and/or a chemically modified (non esterified) starch derived from potatoes, rice, tapioca, corn, pea, rye, oats, barley, maize and wheat.

30. A composition according to claim 1, further comprising in an amount up to 60 % by weight of the total composition, one or more hydrophobic thermoplastic polymer(s).

31. A composition according to claim 1, comprising a starch propionate having a degree of substitution of at least 1.37 and an amylose content of about 70%, and polycaprolactone in an

amount of at least 35% and preferably 50% by weight of the composition.

32. The composition of any one of claims 1 to 31, when shaped into articles.

33. Articles, according to claim 32, selected from the group consisting of bottles, strands, sheets, films, packaging materials, pipes, tubes, lids, cups, rods, laminated films, sacks, bags, cutlery, pharmaceutical capsules, foams, granulates and powders.

34. A process for making the articles of claim 33, selected from the group consisting of extrusion, injection molding, compression molding, filming, blow molding, vacuum forming, thermoforming, extrusion moulding, co-extrusion, foaming, profile extrusion and combinations thereof.

35. The composition of claim 1, and of any one of claims 2 to 30 in the form of a melt.

36. A melt comprising esterified starch and a linear polyester.

37. A process for forming the melt of claim 36, comprising heating an esterified starch, preferably having a degree of substitution of at least about 1.5 and preferably an amylose content of at least about 50% in the presence of a linear polyester to an elevated temperature and plastifying the thus heated composition until a uniform melt is obtained.

38. The use of a linear polyester according to the claims 17 to 23, as a plasticiser for an esterified starch in the process of melt formation.